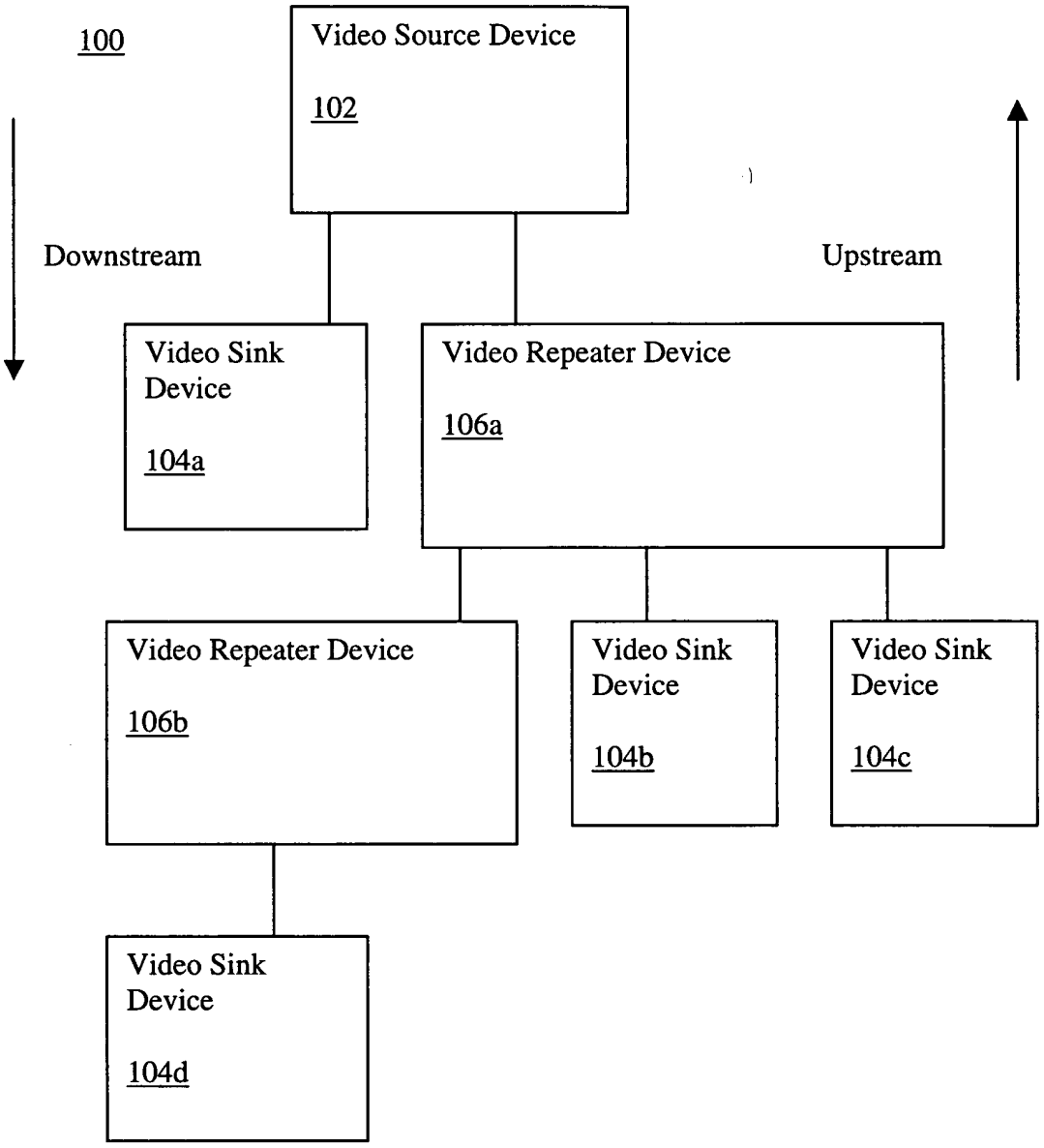
100
Video Source Device
102
Downstream
Upstream
Video Sink Device
104a
Video Repeater Device
106a
Video Repeater Device
106b
Video Sink Device
104b
Video Sink Device
104c
Video Sink Device
104d

**Figure 1**

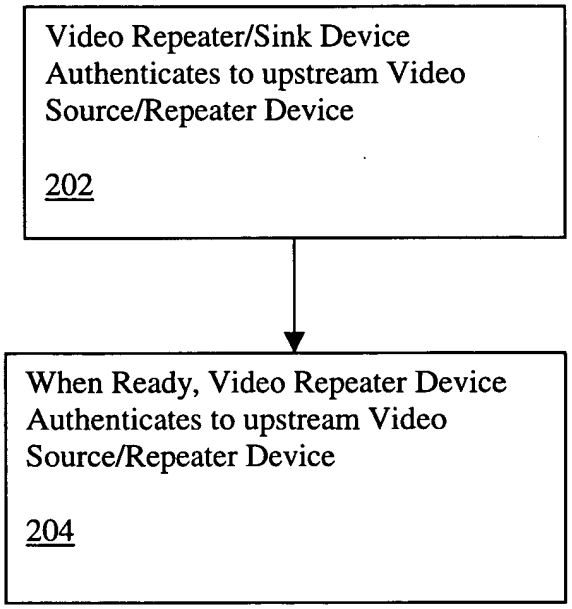
Video Repeater/Sink Device Authenticates to upstream Video Source/Repeater Device
202
When Ready, Video Repeater Device Authenticates to upstream Video Source/Repeater Device
204

**Figure 2**

| Upstream Device | | Downstream Device |
|---|---|---|
| Video Source/Repeater Device ($Ak_{sv}$) | | Video Repeater/Sink Device ($Bk_{sv}$) |
| Generate $A_n$ | $A_n$, $Ak_{sv}$ → <br> ← $Bk_{sv}$, Repeater | |
| Generate $K_m$ ($Akey_{sv}$, $Bk_{sv}$) <br> Generate $K_s$, $M_0$, $R_0$ <br> ($K_m$, Repeater ‖ $A_n$) | | Generate $K_m'$ ($Bkey$, $Ak_{sv}$, ~~$Bk_{sv}$~~) <br> Generate $K_s'$, $M_0'$, $R_0'$ <br> ($K_m'$, Repeater ‖ $A_n$) |
| Determine if $R_0 = R_0'$ | ← $R_0'$ | |

**Figure 3a**

| Upstream Device | | Downstream Device |
|---|---|---|
| Video Source/Repeater Device | | Video Repeater Device |
| Poll Ready | ← Ready <br> ← KSV list, V', Topology | Assemble KSV list <br> V'=SHA-1(KSV list ‖ Topology ‖ $M_0$') |
| V=SHA-1(KSV list ‖ Topology ‖ $M_0$') <br> Determine if V=V' | | |

**Figure 3b**

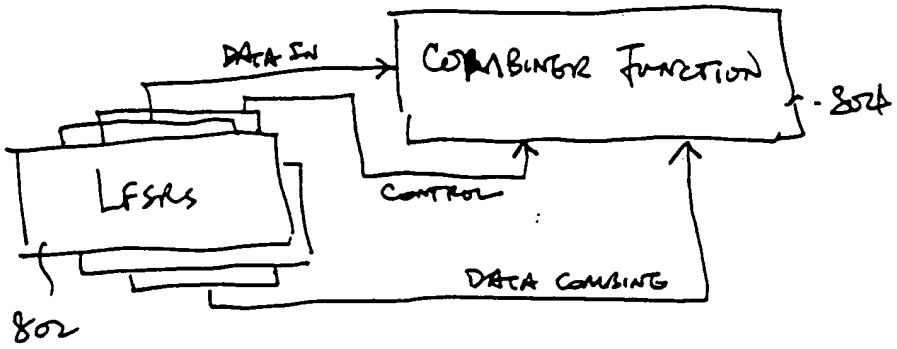


FIG. 4a

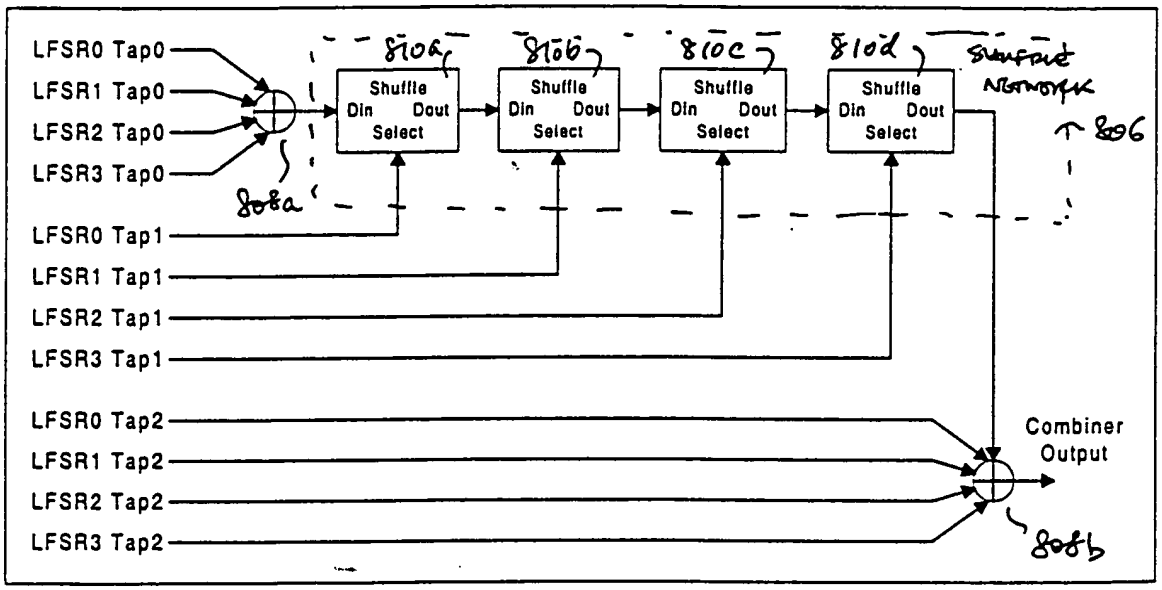


FIG. 4b

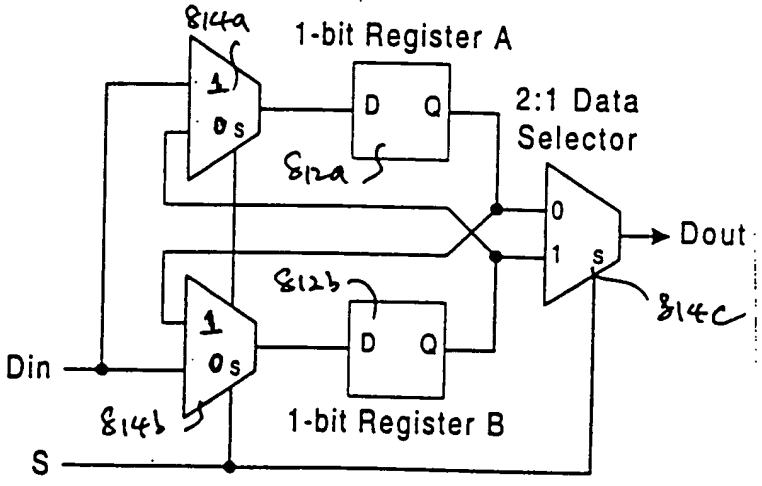


FIG. 4c